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Letter to the Editor

Ultraviolet Light-Related Neural Tube Defects?

To the Editor:

Neural tube defects (NTD) are frequent and severe malformations observed in fetuses, newborns, and stillborns. They comprise spina bifida cystica (meningomyelocele, meningocele, myelocele, and syringomyelia), encephalocele (frontal, parietal, and occipital), anencephaly (meroacranium and holoacranium), and some variants such as faciocraniorachischisis, faciocranioschisis, and craniorachischisis [Van Allen et al., 1993]. The incidence of NTD in general population is approximately 0.5–2 per 1,000. Some environmental factors (seasonal variations and latitude), maternal teratogen exposures (insulin dependent diabetes mellitus, valproic acid, and carbamezapine), fever, and insufficient folate intake have been related to a higher incidence of NTD [Milunsky et al., 1992; Van Allen et al., 1993; Van Rootselaar, 1993].

Last year I observed 3 unrelated patients with NTD whose mothers had been exposed to ultraviolet (UV) light in the so-called "sunbeds" of tanning salons in the first weeks of their pregnancies. Patient 1 had thoracolumbar meningomyelocele, patient 2 had lumbar meningomyelocele, and patient 3 was an anencephalic stillborn (holoacranium type). All 3 mothers were young and healthy. None were diabetic, or had been taking drugs during pregnancy.

Since then I have performed an informal survey of tanning salons in order to determine whether sunbeds may produce hyperthermia. On 32 volunteers, both baseline and 10–15 min postexposure rectal temperatures were evaluated. There were 5 males and 27 females (age range 12–37 years). Mean baseline rectal temperature was 36.9° C (range 36.6–37.3°C), rising to 37.3°C (range 36.7–38.8°C) after exposure. Temperature rose above 38.5°C in 2 women, both with a baseline temperature of 37.3°C (one woman had flu at the time). To my knowledge, no volunteer was pregnant.

Heat-related NTD was widely demonstrated in a study by Milunsky et al. [1992]. Their findings revealed an increased risk for NTD among offspring of women exposed to heat in the form of hot tub, sauna, or fever during early pregnancy. On the other hand, only one uncontrolled study suggests that UV may cause NTD in embryos of exposed mothers [Van Rootselaar, 1993].

In spite of the fact that there are no sufficient data to support the hypothesis of UV- and/or hyperthermia-related teratogenesis in these 3 patients, it is my wish to alert physicians until a proper, controlled study on sunbeds is carried out.

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Pablo Lapunzina
Department of Pediatrics
Children's Hospital of Buenos Aires
University of Buenos Aires
Buenos Aires, Argentina

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Address reprint requests to Pablo Lapunzina, Department of Pediatrics, Children's Hospital of Buenos Aires, University of Buenos Aires, Darwin 1154 D1A, 1414 Buenos Aires, Argentina.